Kentucky Academic Course Code List

Information Technology Courses
without Certification

v 1.1 4/26/18

Kentucky Academic Course Codes
The Kentucky Department of Education (KDE) initiated a course code project under the direction of Commissioner Pruitt in January 2017. The project ensures Kentucky is providing equitable opportunity and access to research-based student experiences that impact student success.

The results of the project include an alignment of core academic course codes to Kentucky Academic Standards. The standards aligned to the core academic course codes cannot be changed. The alignment serves as a guarantee to students across the Commonwealth that all students have equitable access to Kentucky Academic Standards. The project also provides an alignment to Kentucky's new Accountability System, 703 KAR 5:270, which measures opportunity and access provided to students across Kentucky.

The Kentucky Academic Course Code List contains a listing of course codes and descriptions along with certifications that fit the parameters for given courses. The content listed for a course cannot be changed; however, the grade range and population information listed for each course are not absolute and can vary slightly depending on the needs of the school and teacher certifications. Districts should choose the course that most closely represents the content in a given course. ***The description and content of a course are the determining factors in what should be selected.***

Contact Information:

- Districts may contact CourseCodes@education.ky.gov with questions pertaining to course codes, course content and course-standards alignment.
- Districts may contact the EPSB Division of Certification at (502) 564-4606 or dcert@ky.gov with question pertaining to certification.
- Districts may contact KHEAA at (502) 696-7397 or kees@kheaa.com with questions pertaining to KEES eligibility.

HOW TO USE THIS DOCUMENT
This document contains a listing of course codes and descriptions along with certifications that fit the parameters for given courses. The grade range listed for each course are not absolute. Please choose the course that most closely represents the content in a given course.

> EXAMPLE
> John Q Middle School had 5th, 6th, and 7th grade students taking a Visual Art course. This course would be linked to course number **500711: Visual Art – Comprehensive**, which shows a recommended grade range of 6 – 12.

Schools will link their courses on the Infinite Campus "Course Master" tab OR in the "Course" tab to courses listed in this document.

Schools may have created courses that are very unique in order to meet students' needs. If a course does not meet the definition or content of one contained in this document, please use course number **909999: School Defined Course**, and define the correct content through the LEAD report.

The course code 909999 should be used in situations where a current course code does not exist and there are no existing Kentucky Academic Standards aligned to the course. Local Boards of Education should approve the use of a district's use of a 909999 course code *before* a district begins utilizing it within Infinite Campus. Please see the Guiding Principles For Using Course Code 909999 for more information.

CERTIFICATIONS

It is important to note that the certificates listed are the ones that fit ***ALL*** of the parameters for a specific course; there may be other certificates that can teach it with slightly more restrictive parameters.

Please take note of the following information from ***The Kentucky Academic Standards*** with regard to middle school courses that are offered for high school credit.

> **High School Credit Earned in Middle School**
> It is expected that most students will earn high school credits during their high school years. However, local school districts may offer high school courses to middle level students if the following criteria are met:
>
> - the content and the rigor of the course are the same as established in the *Kentucky Academic Standards*
> - the students demonstrate mastery of the middle level content as specified in the *Kentucky Academic Standards*
> - the district has criteria in place to make reasonable determination that the middle level student is capable of success in the high school course
> - **the middle level course is taught by teachers with either secondary or middle level certification with appropriate content specialization**

Although middle level courses list the Provisional and Standard Elementary Certificates, Grades 1-8 as allowable under the parameters of these courses, they will not meet the above requirements for courses that are offered for high school credit.

This document is a guide; therefore the EPSB disclaims any warranties as to the validity of the information in this document. Users of this document are responsible for verifying information received through cross-referencing the official record in the EPSB's Division of Certification. The EPSB shall not be liable to the recipient, or to any third party using this document or information obtained therefrom, for any damages whatsoever arising out of the use of this document.

Information Technology
(110000)

The Information Technology Program prepares students for careers by applying technical knowledge and skills in the rapidly growing fields of computer networking, programming, digital media, support services, and e-commerce/web design.

Information Technology - Information Support and Services (110100)

Career Major-Focuses on the design of computing systems. Includes instruction in the principles of computer hardware & software components, algorithms data basis, telecommunications, etc. Any course not found under this career major/sub code may be found in another career major/sub code within this program area.

110101 - Computer Hardware and Software Maintenance

Grade Level: 9 - 12
Credits: .5-1
Description: Focuses on the design of computing systems, including instruction in the principles of computer hardware and software components, algorithms data basis, telecommunications, etc. Includes the knowledge to identify and explain PC components, setup a basic PC workstation, conduct basic software installation, identify compatibility issues and recognize/prevent basic security risks and also gives knowledge in the areas of Green IT and preventative maintenance of computers.
Content: Information Technology
Population: General

110102 - Help Desk Operations

Grade Level: 9 - 12
Credits: 1
Description: Introduces a variety of tools and techniques to provide user support in help desk operations. Explores help desk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations and software, needs, analysis, facilities management, and other topics related to end user support.
Content: Information Technology
Population: General

110110 - Computer Literacy

Grade Level: 9 - 12
Credits: 1
Description: Introduces students to the main components of computer literacy including Computer Fundamentals, Key Applications and Living Online. Provides an introduction to the computer and the convergence of technology as used in today's global environment. Introduces topics including computer hardware and software, file management, the Internet, e-mail, the social web, green computing, security and computer ethics. Presents basic use of application, programming, systems and utility software. Basic keyboarding skills are strongly recommended. Note: This course is equivalent to Digital Literacy (060112) and will combine as one course effective 2016-2017.
Content: Computer and Technology Applications (Advanced)
Population: General

110152 - Special Topics, Information Support & Services

Grade Level: 9 - 12
Credits: 1
Description: Instruction related to Information Support & Services but not described in above courses.
Content: Information Technology
Population: General

Information Technology - Programming
(110200)

Career Major - Focuses on the general writing and implementation of generic and atomized programs to drive operating systems. Includes software design, languages, and program writing, trouble-shooting, etc. Any course not found under this career major/sub code may be found in another career major/sub code within this program area.

110201 - Introduction to Programming

Grade Level: 9 - 12
Credits: 1
Description: Focuses on the general writing and implementation of generic and atomized programs to drive operating systems. Includes software design, languages, and program writing, trouble-shooting, etc.
Content: Programming (Advanced)
Population: General

110202 - C++ 1

Grade Level: 10 - 12
Credits: 1
Description: Introduces students to fundamental programming concepts using the C++ programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, and information and file processing.
Content: Programming (Advanced)
Population: General

110204 - Productivity Software

Grade Level: 10 - 12
Credits: 1
Description: Utilizes current word processing, spreadsheet, database, and presentation application software to solve common technology and business problems. Covers basic features of each software application.
Content: Information Technology
Population: General

110205 - JAVA Programming I

Grade Level: 10 - 12
Credits: 1
Description: Introductory course to object oriented programming in Java. Students learn to write, compile, test, and debug basic applets and applications that use a graphical user interface.
Content: Programming (Advanced)
Population: General

110206 - JAVA Programming II

Grade Level: 10 - 12
Credits: 1
Description: This course is a continuation of Java Programming I. Students learn input and output streams, networking, advanced graphical user interface features, and the benefits of object-oriented techniques such as encapsulation, inheritance, etc.
Content: Programming (Advanced)
Population: General

110207 - Visual Basic 1

Grade Level: 10 - 12
Credits: 1
Description: Introduces students to fundamental programming concepts using the Visual Basic programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, event-driven programming, graphical user interfaces, and file processing
Content: Programming (Advanced)
Population: General

110208 - Visual Basic II: Creating Desktop Applications

Grade Level: 10 - 12
Credits: 1
Description: This course is designed to provide students with the knowledge and skills to design, develop, and implement Visual Basic applications designed to run on individual computers or workstations. This course helps prepare the student for Microsoft Certified Professional Examination.
Content: Programming (Advanced)
Population: General

110211 - Introduction to Database Design

Grade Level: 9 - 12
Credits: 1
Description: Provides an overview of database and database management system concepts, internal design models, normalization, network data models, development tools, and applications.
Content: Information Technology
Population: General

110213 - Design for the Internet

Grade Level: 10 - 12
Credits: 1
Description: Introduces basic computer graphics with special emphasis on graphics for games.
Content: Information Technology
Population: General

110214 - C# I

Grade Level: 10 - 12
Credits: 1
Description: Introduces students to fundamental programming concepts using the C# programming language. Includes data types, control structures, simple data structures, error-handling, object-oriented programming, graphical user interfaces, and modular programming.
Content: Programming (Advanced)
Population: General

110215 - C# II

Grade Level: 10 - 12
Credits: 1
Description: Provides students with an extensive overview of designing and developing advanced object-oriented applications using the C# programming language. Includes advanced graphical user interfaces, event-driven programming, advanced data types and structures, concurrency, file and data base processing, mobile computing, and other advanced topics.
Content: Programming (Advanced)
Population: General

110216 - C++ II

Grade Level: 10 - 12
Credits: 1
Description: Introduces students to advanced programming concepts using C++. Includes advanced data structures, concurrency, innovative algorithms, advanced file processing, and topics that are unique to C++
Content: Programming (Advanced)
Population: General

110217 - Perl I

Grade Level: 10 - 12
Credits: 1
Description: Provides students with an overview of the Perl scripting language. Includes coding, testing, and debugging Perl programs; using variables, operators, and data types; and using control structures, pattern matching, objects, and application scripts.
Content: Programming (Advanced)
Population: General

110218 - PHP I

Grade Level: 10 - 12
Credits: 1
Description: Explores the fundamentals of PHP, with emphasis on syntax, structure, and current usage. Includes dynamic generation of web pages, fluid forms, and web security.
Content: Programming (Advanced)
Population: General

110219 - PHP II

Grade Level: 10 - 12
Credits: 1
Description: Explores the dynamic features of PHP and how it can interact to form spontaneous websites and dynamic feature rich content.
Content: Programming (Advanced)
Population: General

110220 - Python I

Grade Level: 10 - 12
Credits: 1
Description: Introduces students to fundamental programming concepts using the Python programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, object-oriented programming, graphical user interfaces and file processing.
Content: Programming (Advanced)
Population: General

110221 - Python II

Grade Level: 10 - 12
Credits: 1
Description: Provides students with an extensive overview of designing advanced computer applications using the Python programming language. Includes graphical user interfaces, event-driven programming, modular programming, advanced object-oriented programming, advanced data types and structures, input validation, error-handling, database processing, and client/server programming.
Content: Programming (Advanced)
Population: General

110222 - Cyber Literacy I (NICERC)

Grade Level: 9 - 12
Credits: 1
Description: Cyber Literacy I (NICERC) is a hands-on curriculum that builds a strong cyber foundation for high school students. The course introduces students to cyber by blending robotics, programming, electricity, and elements of liberal arts. Students learn about the opportunities, threats, responsibilities, and legal constraints associated with operating in cyberspace. Throughout the course, students learn the basics of electricity, programming, and networking as well as developing critical thinking skills. Cyber Literacy lays a foundation for further exploration into STEM and cyber-related

topics.
Content: Information Technology
Population: General

110223 - Cyber Literacy II (NICERC)

Grade Level: 9 - 12
Credits: 1
Description: Cyber Literacy II (NICERC) is a project-driven curriculum that expands a student's understanding of cyberspace through two primary topics: systems engineering and liberal arts. The Cyber Literacy II course builds upon fundamental cyber skills developed in Cyber Literacy and challenges students to go deeper into the world of cyberspace.
Content: Information Technology
Population: General

110224 - Cyber Science (NICERC)

Grade Level: 9 - 12
Credits: 1
Description: Cyber Science (NICERC) is an innovative, project-driven course that integrates science, technology, engineering, and mathematics (STEM) disciplines with liberal arts. Cyber Science uses the Parallax® Boe-Bot® robot as a platform for teaching important cyber concepts and fundamentals. Throughout the course, students are engaged in a systems-level approach to problem-solving using robotics and computer science in the context of liberal arts. Seamlessly integrating the different disciplines provides students with a dynamic learning environment and a unique educational experience. Through Cyber Science, students are not only able to make meaningful connections between STEM and liberals arts, they also learn how to become better cyber citizens.
Content: Information Technology
Population: General

110225 - Computer Science (NICERC)

Grade Level: 9 - 12
Credits: 1
Description: Computer Science (NICERC) is a hands-on, projects-based curriculum that utilizes a unique computing platform to engage students in an immersive exploration of the breadth of computer science. Through a puzzle-based learning approach that is strategically meshed with candid discussions of the philosophy and expectations that underlie the learning process, a foundation of problem solving and critical thinking is laid upon which the four major themes of computer science are then iteratively built as pillars. Various beams that showcase the applications of computer science are finally laid atop the pillars. The high-level goals of the curriculum are to (1) Expose students to the beauty of computer science through an engaging discovery process; (2) Show how exploring computer science can be used to solve hard problems; and (3) Cultivate problem solvers who are comfortable at tackling hard problems and who understand that computer science is a lifelong learning process.
Content: Information Technology
Population: General

110226 - Project-Based Programming

Grade Level: 10 - 12
Credits: 1
Description: This project-based learning course engages the conscientious and serious programming

student. In this course, students will create projects that require computer science fundamentals and extensive research to successfully complete. Students will work either solo or in a team to execute a project decided upon by the student(s). Students must learn and demonstrate proficiency in time management, scope, research, computer science, and teamwork to be successful in this course. Finally, students will engage in leadership skills by being held accountable for completion of tasks and projects.
Content: Information Technology
Population: General

110251 - Computational Thinking

Grade Level: 10 - 12
Credits: 1
Description: Students analyze the structure of the worldwide web, apply basic principles of web documents and HTML, and develop multi-media web pages. Course content will include the understanding of hypertext and web structures. Equipment such as scanners, digital and video cameras and sound recording devices will be utilized through hands-on instruction. Promotes understanding of computer programming and logic by teaching students to "think like a computer". Covers skills needed to develop and design language-independent solutions to solve computer related problems. Covers developmental and design basics including use of variables, control and data structures, and principles of command-line and object-oriented languages.
Content: Information Technology
Population: General

110252 - Special Topics, Programming

Grade Level: 9 - 12
Credits: 1-3
Description: Instruction related to Programming but not described in above courses.
Content: Information Technology
Population: General

Information Technology - Career Major Electives
(110300)

110302 - Management of Support Services

Grade Level: 11 - 12
Credits: 1
Description: Digitally organizing the information technology milestone achieved by the student that is reflective of their industry certification readiness, understanding the cost of doing business, and preparation of technical and behavioral job interviews. Focuses on employability skills to include: a professional digital portfolio that emphasizes critical milestones that focus on entry level information technology employability skills. (Previously Help Desk II)
Content: Information Technology
Population: General

110399 - Leadership Dynamics - Information Technology

Grade Level: 9 - 12
Credits: 1/2 - 1
Description: This course is designed to assist students with developing skills needed to be successful leaders and responsible members of society. This student will develop personal attributes and social skills. Emphasis will be placed on interpersonal skills, team building, communication, personal development and leadership. This course will include opportunities for students to apply their knowledge.
Content: Leadership Dynamics
Population: General

Information Technology - Computer Science
(110700)

Career Major- Focuses on computers, computing problems and solutions, and the design of computer systems and user interfaces from a scientific perspective. Includes instruction in the principles of computational Science, and computing theory; computer hardware design; computer development and programming; and applications to a variety of end-use situations. Any course not found under this career major/sub code may be found in another career major/sub code within this program area.

110701 - AP Computer Science A

Grade Level: 10 - 12
Credits: 1
Description: AP Computer Science A is equivalent to a first-semester, college level course in computer science. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using Java language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. The AP Computer Science A course curriculum is compatible with many CS1 courses in colleges and universities. College credit is earned with a qualifying score on an AP exam.
Content: AP Computer Science
Population: General

110710 - Introduction to Computer Science

Grade Level: 9 - 12
Credits: 1
Description: Introduction to Computer Science is designed to introduce students to the breadth of the field of computer science through an exploration of engaging and accessible topics. Rather than focusing the entire course on learning particular software tools or programming languages, the course is designed to focus on the conceptual ideas of computing and help students understand why certain tools or languages might be utilized to solve particular problems. The goal of the course is to develop in students the computational practices of algorithm development, problem solving and programming within the context of problems that are relevant to the lives of today's students. Students will also be introduced to topics such as interface design, limits of computers, and societal and ethical issues.
Content: Computer Science
Population: General

110711 - AP Computer Science Principles

Grade Level: 9 - 12
Credits: 1
Description: The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. In this course, students will develop computational

thinking skills vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. The course engages students in the creative aspects of the field by allowing them to develop computational artifacts based on their interests. Students will also develop effective communication and collaboration skills by working individually and collaboratively to solve problems, and will discuss and write about the impacts these solutions could have on their community, society, and the world. College credit is earned with a qualifying score on an AP exam.
Content: Computer Science
Population: General

110752 - Special Topics, Computer Science

Grade Level: 9 - 12
Credits: 1-3
Description: Instruction related to Computer Science but not described in above courses.
Content: Computer Science
Population: General

Information Technology - Web Development/Administration (110800)

Career Major- Prepares individuals to apply HTML, XML, JavaScript and other authoring tools to the design, editing, and publishing of documents, images, graphics, sound and multimedia products on the World Wide Web. Any course not found under this career major/sub code may be found in another career major/sub code within this program area.

110801 - Web Page Development

Grade Level: 10 - 12
Credits: 1
Description: Introduces we page design through the use of HTML and CSS. Uses text and/or web editors to create web documents with various formats and page layouts, multimedia, tables and forms. Emphasizes W3C web design and accessibility standards.
Content: Web Page Design
Population: General

110804 - Website Design and Production

Grade Level: 10 - 12
Credits: 1
Description: This course gives the student an experience with advanced topics in planning and implementing a professional web site. Emerging technologies will be explored in creating interactive web pages that incorporate cascading style sheets, DHTML, JavaScript and multimedia and graphics. Designing for a cross-browser web site and different monitor resolutions should be covered. Introduces web site production processes with emphasis on design involving layout, navigation, interactivity and using web production software.
Content: Web Page Design
Population: General

110809 - JavaScript

Grade Level: 10 - 12
Credits: 1
Description: Provides students with an overview of the JavaScript scripting language. Includes coding, testing, and debugging JavaScript programs; using variables, operators, and data types; creating dynamic web pages using JavaScript; controlling the behavior of forms, buttons, and text elements; and using control structures, pattern matching, objects, and application scripts.
Content: Web Page Design
Population: General

110810 - Flash with Action Script

Grade Level: 10 - 12
Credits: 1
Description: This course will introduce Macromedia Flash. Students will gain experience in creating graphics, animation, text, forms, and special effects.
Content: Web Page Design
Population: General

110852 - Special Topics, Web Development/Administration

Grade Level: 9 - 12
Credits: 1
Description: Instruction related to Web Development/Administration but not described in above courses.
Content: Information Technology
Population: General

Information Technology - Networking
(110900)

Career Major - Focuses on the design, implementation and management of linked systems of computers, peripherals, associated software. Includes introduction in systems and applications; systems design and analysis; networking theory and solutions; types of networks; network management and control; network and flow optimization; security; configuring; and troubleshooting. Any course not found under this career major/sub code may be found in another career major/sub code within this program area.

110901 - Introduction to Networking Concepts (non-vendor)

Grade Level: 9 - 12
Credits: 1
Description: Introduces technical level concepts of non-vendor specific networking including technologies, media, topologies, devices, management tools, and security. Provides the basics of how to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure.
Content: Information Technology
Population: General

110902 - Network Fundamentals/Cisco I

Grade Level: 9 - 12
Credits: 1
Description: Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. Provides the opportunity to build simple LAN topologies by applying principles of cabling; performing basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. (This is the first course in the 2013 Cisco curriculum.)
Content: Information Technology
Population: General

110903 - Routing Protocol and Concepts/Cisco II

Grade Level: 10 - 12
Credits: 1
Description: Provides students with the skills necessary to understand and apply concepts related to networking hardware. Covers TCP/IP concepts such as IP addressing and subnetting, router configuration, routed and routing protocols. Completes one of a series of four courses that helps prepare students for the Cisco Certified Network Associate (CCNA) certification exam. (This is the second course in the 2013 Cisco curriculum.)
Content: Information Technology
Population: General

110904 - LAN Switching and Wireless/Scaling Networks/Cisco III

Grade Level: 10 - 12
Credits: 1
Description: Provides students with the skills necessary to understand and apply advanced networking concepts. Covers local area network (LAN) switching, virtual local area networks (VLANS), advanced network design concepts, advanced router configuration and advanced network management projects. (This is the third course in the 2013 Cisco curriculum.)
Content: Information Technology
Population: General

110905 - Accessing the WAN/Connecting Networks/Cisco IV

Grade Level: 10 - 12
Credits: 1
Description: Provides students with the skills necessary to understand and apply advanced principles and applications in deploying networking hardware Covers WAN design, WAN connectivity protocols such as PPP, ISDN and Frame Relay, as well as advanced network management projects. (This is the fourth course in the 2013 CISCO curriculum.)
Content: Information Technology
Population: General

110906 - Network Hardware Installation and Troubleshooting

Grade Level: 10 - 12
Credits: 1
Description: This course is designed to provide students with the knowledge and skills to design, configure, troubleshoot, wire and cabling systems, and equipment involved with connecting a local area network.
Content: Information Technology
Population: General

110907 - Microsoft Active Directory Server

Grade Level: 10 - 12
Credits: 1
Description: Provides students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows Directory Services. Focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers. Assists in prepping students for exams in the Microsoft certification exam series.
Content: Information Technology
Population: General

110912 - Security Fundamentals

Grade Level: 10 - 12
Credits: 1
Description: Introduces basic computer and network security concepts and methodologies. Covers principles of security; compliance and operational security; threats and vulnerabilities; network security; application, data, and host security; access control and identity management; and cryptography. This course leads to the Security + Certification.
Content: Information Technology
Population: General

110913 - Microsoft Client Server/Config

Grade Level: 10 - 12
Credits: 1
Description: Covers installation and configuration of Microsoft Windows client and server operating systems. Helps prepare students for exams in the Microsoft certification exam series.
Content: Information Technology
Population: General

110917 - Internet Technologies

Grade Level: 10 - 12
Credits: 1
Description: Provides students with a study of traditional and emerging Internet technologies. Covers topics including Internet fundamentals, Internet applications, Internet delivery systems, and Internet client/server computing. Provides a hands-on experience and some programming in an Internet environment.
Content: Information Technology
Population: General

110918 - IT Co-op

Grade Level: 11 - 12
Credits: 1
Description: Cooperative Education for CTE courses provide supervised work site experience related to the student's identified career pathway. A student must be enrolled in a valid course in the pathway during the same school year that the co-op experience is completed, unless the student has already met completer status in the pathway. Students who participate receive a salary for these experiences, in accordance with local, state and federal minimum wage requirements according to the Work Based Learning Guide.
Content: Information Technology
Population: General

110919 - Information Technology Internship

Grade Level: 11 - 12
Credits: 1
Description: Internship for CTE courses provide supervised work-site experience for high school students who are enrolled in a capstone course associated with their identified career pathway. Internship experiences consist of a combination of classroom instruction and field experiences. A

student receiving pay for an intern experience is one who is participating in an experience that lasts a semester or longer and has an established employee-employer relationship. A non-paid internship affects those students who participate on a short-term basis (semester or less).
Content: Information Technology
Population: General

110952 - Special Topics, Networking

Grade Level: 9 - 12
Credits: 1-3
Description: Instruction related to Networking but not described in above courses.
Content: Information Technology
Population: General

Information Technology - Informatics
(111000)

111001 - Computers, Networks, and Databases

Grade Level: 9 - 12
Credits: 1
Description: This project-based-learning course engages students who are curious about Informatics. In this course, students will learn how to use a design process to create systems that acquire, store and communicate data for a variety of career fields. Students will work collaboratively in teams to design systems, problem solve, think critically, be creative and communicate with each other and business partners. Students will participate in real-world experiences such as designing an inventory system for a retail store, comparing stores in a company to project future sales, track customer buying habits and more.
Content: Informatics
Population: General

111002 - Design for the Digital World

Grade Level: 9 - 12
Credits: 1
Description: A project-based-learning course that engages students who are interested in applying the design process to create systems such as a cloud-based digital storage system for images, design a system to automatically collect and report data on highway usage, apply a geospatial system to map a store and develop a database that studies shopping habits, etc. Through these projects, students will learn about data management, logic-based queries, the collection of data utilizing GPS and analysis utilizing GIS, and how to automate data collection to make processes more effective and efficient. They will work collaboratively in teams and demonstrate their learned knowledge and skills by presenting their new and innovative ideas, techniques and solutions to business and industry partners.
Content: Informatics
Population: General

111003 - Databases in the Cloud

Grade Level: 9 - 12
Credits: 1
Description: This project-based-learning course is for students who successfully completed Courses 1 and 2 and are interested in more complex challenges that business and industry face. Students at this level will learn about web technologies, cloud storage, information security, data, animation, introductory computer programming and database applications. Students will take more responsibility for their own learning, problem-solving, and thinking outside of the box. Real world challenges will require higher levels of research, building, testing, analyzing and improving systems. Students design solutions for real world problems by the designing a database for ticket sales; designing security for a database; creating a game with animation; reporting information based on data for a population in a community; as well as designing, building and testing an application for a database.

Content: Informatics
Population: General

111004 - Developing a Cloud Presence

Grade Level: 9 - 12
Credits: 1
Description: Students in this capstone course will focus on the ethics of privacy, social networking, designing for clients and artificial intelligence through six authentic projects. Students will select a business partner and design, build and test a Web presence for a company that will apply the concepts from the three prior courses. Student teams will work collaboratively with a business partner to develop a proposal for the project with evaluation criteria. Once the business partner accepts the proposal, the student team will implement it by designing, planning, building the system, and testing and revising the system to meet the needs of the business. Depending on articulation agreements or state policy, opportunity for dual credit may be available to students who successfully complete this course.
Content: Informatics
Population: General

Information Technology - Digital Design/Game Development (113600)

Provides students with a thorough understanding of techniques for designing advanced 3D games and simulations. Courses will cover 2D and 3D graphics, animation, character development, texturing, rigging, scripting and game setup using state-of-the-art software development tools.

113601 - Introduction to Digital Game Graphics

Grade Level: 9 - 12
Credits: 1
Description: Emphasizes creating 3D graphics using one or more state-of-the-art software packages. Provides students with a thorough understanding of techniques for designing advanced 3D games and simulations. Courses will cover 2D and 3D graphics, animation, character development, texturing, rigging, scripting and game setup using state-of-the-art software development tools.
Content: Information Technology
Population: General

113602 - Advanced Game Development and Publishing

Grade Level: 10 - 12
Credits: 1
Description: Introduces the techniques for creating textures and lighting for 3D games and simulations. This course will focus on creating games using code, animation, and an introduction to 3d design software utilized in the industry. In addition, students will see how the skills and knowledge acquired in Game Design I & II come together utilizing a game engine.
Content: Information Technology
Population: General

113603 - Advanced 3D Game Development

Grade Level: 10 - 12
Credits: 1
Description: Develop realistic 3D characters with complete body structure. This course will focus on creating games using code, 3d characters, objects, and animation utilizing game engines. Students will see how the skills and knowledge acquired in Game Design I - III come together. Students will create work ready products for the industry.
Content: Information Technology
Population: General

113604 - Digital 3D Graphics and Special Effects II

Grade Level: 9 - 12
Credits: 1
Description: Introduces advanced texturing and lighting techniques to enhance depth perception and realism within 3D environments.
Content: Information Technology
Population: General

113605 - Game Design and Development Principles

Grade Level: 9 - 12
Credits: 1
Description: This course is a general introduction to Game Design providing an overview of story development, gaming history, game reviews, current gaming trends and industry software. Students will begin to create and develop a game story/plot that can be further developed in higher level courses as well as critique current games. In addition, game development software will be explored to further enhance their design skills.
Content: Information Technology
Population: General